Claims

1. A printing unit (24, 28) of a rotary printing press, having a first cylinder (02, 04) which forms a nip point in a print-on position together with a second cylinder (03) which has a compressible surface, wherein the two cylinders (02, 03, 04) have bearing rings (21, 22, 23), which act together in the print-on position, and a radius (r21, r23) of a bearing ring (21, 23) assigned to the first cylinder (02, 04) is greater than a radius (r22) of a bearing ring (22) assigned to the second cylinder (03), characterized in that an effective radius (r02, r04) of the first cylinder (02, 04) in the area of its barrel is greater than the radius (r21, r23) of its bearing ring (21, 23).

2. A printing unit (24, 28) of a rotary printing press, having a first cylinder (02, 04) which forms a nip point (17) in a print-on position together with a second cylinder (03), which has a compressible surface, and wherein in the area of the nip point (17) in the print-on position an effective radius (r02, r04) of the first cylinder (02, 04) is greater than an effective radius (r03b2) of the second cylinder (03), characterized in that a radius (r21, r23) of a bearing ring (21, 23) assigned to the first cylinder (02, 04) is greater than a radius (r22) of a bearing ring (22), which is assigned to the second cylinder (03) and in the print-on position acts together with the former.

3. The printing unit (24, 28) in accordance with claim 1 or 2, characterized in that the first cylinder (04) is embodied as a counter-pressure cylinder (04).

4. The printing unit (24, 28) in accordance with claim 1 or 2, characterized in that the first cylinder (04) is embodied as a forme cylinder (02).

5. The printing unit (24, 28) in accordance with claim 1 or 2, characterized in that the second cylinder (03) is embodied as a transfer cylinder (03) supporting a compressible layer (11).

6. The printing unit (24, 28) in accordance with claims 3 and 5, characterized in that in a print-on position the transfer cylinder (03) acts together with a forme cylinder (02).

7. The printing unit (24, 28) in accordance with claim 1 or 2, characterized in that the second cylinder (03) is embodied as a forme cylinder supporting a compressible printing forme (09).

8. The printing unit (24, 28) in accordance with claim 4 or 6, characterized in that in the print-on position there is a ratio of an effective radius (r02) of the forme cylinder (02) to an effective radius (r03b1) of the second cylinder (03) which lies in the range between 1.0015 and 1.0030 in the area of the nip point (16).

9. A printing unit (24, 28) of a rotary printing press, having a forme cylinder (02) which, in the print-on position, forms a nip point (16) with a second cylinder (03), characterized in that in a print-on position there is a ratio of an effective radius (r02) of the forme cylinder (02) to an effective radius (r03b1) of the second cylinder (03) which lies in the range between 1.0015 and 1.0030 in the area of the nip point (17).

10. The printing unit (24, 28) in accordance with claim 6 or 9, characterized in that a radius (r21) of a bearing ring (21) assigned to the forme cylinder (02) is greater than a radius (r22) of a cooperating bearing ring (22) assigned to the second cylinder (03).

11. The printing unit (24, 28) in accordance with claim 9, characterized in that the second cylinder (03) is embodied as a transfer cylinder (03) which supports a compressible layer (11).

12. The printing unit (24, 28) in accordance with claims 4 and 5 or claim 11, characterized in that in the print-on position, the transfer cylinder (03), together with a counter-pressure cylinder (04) which has a bearing ring (23), constitutes a printing location.

13. The printing unit (24, 28) in accordance with claim 3 or 12, characterized in that a ratio (r04) of the counter-pressure cylinder (04) in respect to the ratio (r23)

of its bearing ring (23) lies in the range between 1.0004 and 1.0012.

14. The printing unit (24, 28) in accordance with claim 3 or 12, characterized in that a ratio (r04) of the counter-pressure cylinder (04) in respect to the ratio (r23) of its bearing ring (23) lies in the range between 1.0006 and 1.0009.

15. The printing unit (24, 28) in accordance with claims 4 and 5 or claim 12, characterized in that the radius (r23) of the bearing ring (23) assigned to the counter-pressure cylinder (04) is embodied to be greater by 0.01 to 0.03 mm than a radius (r22) of the bearing ring (22) assigned to the transfer cylinder (03).

16. The printing unit (24, 28) in accordance with claim 3 or 12, characterized in that an effective radius (r04) of the counter-pressure cylinder (04) in the area of its barrel is greater than a radius (r23) of its bearing ring (23).

17. The printing unit (24, 28) in accordance with claim 4 or 9, characterized in that a radius (r02) of the forme cylinder (02) in the area of its barrel is greater than a radius (r21) of its bearing ring (21).

18. The printing unit (24, 28) in accordance with claim 3 or 16, characterized in that the effective radius

(r04) of the counter-pressure cylinder (04) is greater by 0.06 to 0.18 mm than the radius (r23) of its bearing ring (23).

19. The printing unit (24, 28) in accordance with claim 3 or 16, characterized in that the effective radius (r04) of the counter-pressure cylinder (04) is greater by 0.08 to 0.16 mm than the radius (r23) of its bearing ring (23).

20. The printing unit (24, 28) in accordance with claims 4 and 5 or claim 11, characterized in that the radius (r21) of the bearing ring (21) assigned to the forme cylinder (02) is greater by 0.015 to 0.25 mm than the radius (r22) of the bearing ring (22) assigned to the transfer cylinder (03).

21. The printing unit (24, 28) in accordance with claim 6 or 12, characterized in that the bearing ring (21) assigned to the forme cylinder (02) has a greater radius (r21) than that of the assigned transfer cylinder (03), and the bearing ring (22) assigned to the transfer cylinder (03) has a smaller radius (r22) than the bearing ring (23) of the counter-pressure cylinder (04) assigned to it.

22. The printing unit (14, 28) in accordance with claim 6 or 12, characterized in that in a print-on position the forme cylinder (02) has a greater radius (r02) in the area of its barrel than the assigned transfer cylinder (03), and the transfer cylinder (03) has a smaller radius (r03b1,

ro3b2) in the area of its barrel than the counter-pressure cylinder (04) assigned to it.

23. The printing unit claim 3 or 12, characterized in that the counter-pressure cylinder (04) is embodied as a satellite cylinder (04) and is arranged to act together with several second cylinders (03) which have compressible surfaces.

24. The printing unit (01) in accordance with claim 1, 2, 6, 9, 12 or 23, characterized in that each of the cylinders (02, 03, 04) has been assigned its own drive motor (26), which is mechanically independent of other cylinders (02, 03, 04).

25. The printing unit (01) in accordance with claim 5 and one of claims 4 or 6, or in accordance with claim 9 or claim 23, characterized in that their own drive motor (26), which is mechanically independent of other cylinders (02, 03, 04), is assigned to the pair of forme and assigned transfer cylinders (02, 03).

26. The printing unit (01) in accordance with claim 3, 12 or 23, characterized in that its own drive motor (26), which is mechanically independent of other cylinders (02, 03, 04), is assigned to the counter-pressure cylinder (04).

27. The printing unit (24) in accordance with claim 23, characterized in that it is embodied as a nine-cylinder printing unit (24).

28. The printing unit (24) in accordance with claim 23, characterized in that it is embodied as a ten-cylinder printing unit (28).

29. The printing unit (28) in accordance with claim 28, characterized in that two counter-pressure cylinders (04) assigned to the printing unit (28) are together driven by a drive motor (26) independently of other cylinders (02, 03, 04).

30. The printing unit (28) in accordance with claim 28, characterized in that two counter-pressure cylinders (04) assigned to the printing unit (28) are each driven by respectively their own drive motors (26) independently of other cylinders (02, 03, 04).